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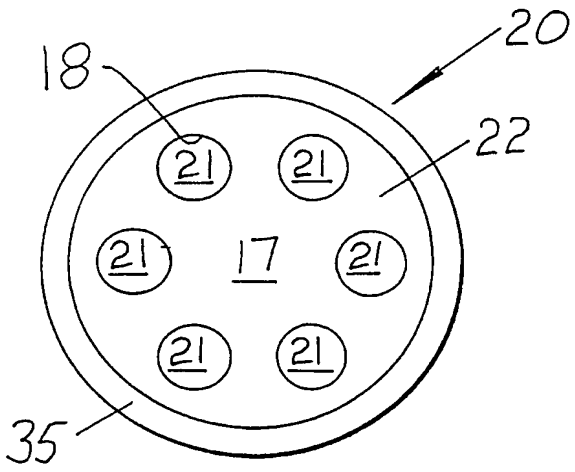
(54) Title: IMPROVEMENTS IN OR RELATING TO AN ELECTRON GUN AND AN ELECTRON BEAM WINDOW



(57) Abstract: An electron beam window (20) is formed with six diamond panes (21) to transmit an electron beam (15). The panes (21) are formed in a cylindrical disc (17) of single crystal or of polycrystalline diamond such that each pane (21) is surrounded by a thicker integral peripheral rim (22) which conducts heat away from the panes (21). A heat sink ring (35) can be fitted to the outer cylindrical surface of the peripheral rim (22). A scanning means (36) indexes the electron beam (15) sequentially through each pane (21). The use of diamond panes reduces the electron beam energy converted to heat in each pane (21), the thicker peripheral rim (22) increases cooling of the panes (21), and the scanning movement (37) reduces the temperature rise of the panes (21).

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